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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,727	12/05/2001	Jon Jody Fong	USA.292	6752
7590	03/01/2004			
James E. Curry 3D Systems, Inc. 26081 Avenue Hall Valencia, CA 91355			EXAMINER EDWARDS, LAURA ESTELLE	
			ART UNIT 1734	PAPER NUMBER

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/001,727	Applicant(s) FONG, JON JODY	
	Examiner Laura E. Edwards	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 11-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12501</u> . | 6) <input type="checkbox"/> Other: ____  |

*Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, drawn to a method, classified in class 264, subclass 308.
- II. Claims 11-17, drawn to an apparatus, classified in class 425, subclass 375.
- III. Claims 18-31, drawn to a cooling system, classified in class 425, subclass 445.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used in a different process such as building a two dimensional object.

Inventions II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require at least one fan for generating a flow of air; at least one air duct having an inlet end and an exit end, the air duct in communication with the fan for receiving the flow of air at the inlet end. The subcombination has separate utility such as cooling a metallic coating on a flat or two-dimensional object.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ralph D'Alessandro on 2/22/04 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

#### ***Information Disclosure Statement***

The information disclosure statement filed 12/05/01 includes references to pending applications. These applications have been reviewed, however, the applications have been crossed out on the IDS because they are not deemed prior art.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Batchelder et al (US 5, 303,141).

Batchelder et al teach a method for forming a three-dimensional object in a layerwise manner from a build material, the method comprising the steps of providing object layer data in a CAD system, forming layers of the three-dimensional object according to the object layer data; providing at least one substantially uniform sheet of air flow across the layers of the three-dimensional object to remove heat from the layers of the three-dimensional object (see col. 5, lines 53-58; col. 7, lines 48-52; and col. 10, lines 48-61).

With respect to claim 2, airflow is directed in a direction away from the dispensing device (See Fig. 10C).

With respect to claim 3, the dispensing nozzle (12) is reciprocated or translated in a main scanning direction along the x-axis relative to the object.

With respect to claim 4, the dispensing nozzle (12) is reciprocated or translated in a secondary scanning direction along the y-axis relative to the object.

#### *Allowable Subject Matter*

Claims 6-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-10 would be allowable because there is no teaching or suggestion in the prior art of a method of forming a three-dimensional object in a layerwise manner from a build material, the method comprising the combined steps of providing object layer data, forming layers of the three-dimensional object according to the object layer data, providing at least one substantially uniform sheet of air flow across the layers of the three-dimensional object to

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remove heat from the layers of the three-dimensional object, the air flow established by directing a flow of air along an air duct, the air duct having a protrusion on the end of the duct, the protrusion diverting flow of air away from the air duct and towards the layers of the three-dimensional object.

### *Conclusion*

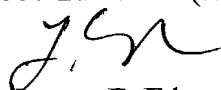
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent discloses the state of the art with respect to the use of an air curtain including a protrusion or corner for directing air toward extruded material: Appel et al (US 4,340,563). The following patent discloses the state of the art with respect to a 3D object forming system including a blower (see Fig. 46A): Feygin et al (US 5,637,175).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura E. Edwards  
Primary Examiner  
Art Unit 1734

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February 20, 2004